ContinuUM

University of Michigan
Department of Mathematics
NEWSLETTER • 2025

Honors Program Recognized with McKay Award

The Department of Mathematics has been recognized with the 2025 Tim McKay Departmental Honors Award for our "long-standing efforts to create opportunities for students to challenge themselves, excel in our discipline, find research and teaching opportunities, and to graduate with Honors from LSA." The award is named for Tim McKay, Arthur F. Thurnau Professor of Physics, Astronomy, and Education, current LSA Associate Dean for Undergraduate Education, and former director of the Honors Program.

In four of the last five years, more math majors have graduated with honors than majors from any other department in LSA. Moreover, students of mathematics are regularly recognized by the College's Honors Program for their achievements, receiving prestigious and highly competitive Goldstein Prizes such as the Jerome and Isabella Karle Physical Sciences Award, the Sidney Fine Teaching Award, and the Stephen Smale Mathematical Sciences Award. The success of the whole undergraduate program reflects the dedication of many faculty who have been involved in managing and directing courses throughout the curriculum, including the honors sequences in algebra, analysis, and math.

Professor Sarah Koch (center) with members of her 2019-20 Math 295 honors class, on graduation in 2023. This class was particulary close as they transitioned to remote learning before the end of the semester.

The rigorous theoretical honors courses have, for decades, provided students with an in-depth introduction to mathematical reasoning and problem-solving. Alumni of the sequences often reflect on the lasting impact of these courses and their instructors in shaping their decision to pursue math as a career. Students in these honors courses form close-knit

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View From the Chair's Office
Karen Smith

Michigan Math continues to thrive and grow! We are thrilled to announce several outstanding new faculty hires:

- **Assistant Professor Zhiyan Ding**, applied and computational mathematics
- **Assistant Professor Patrick Lutz**, logic, computability theory and descriptive set theory
- **Associate Professor Ian Tobasco** (UM B.S.E, 2011), calculus of variations and partial differential equations
- **Associate Professor Lue Pan**, algebraic number theory, p-adic aspects of the Langlands program
- **Professor Sam Payne** (UM Ph.D., 2006), algebraic geometry, topology, and combinatorial structure of algebraic varieties and their moduli spaces
- **Professor Naoki Masuda**, applied mathematics, network science and mathematical biology

You can read more detailed bios for all six starting on page 2.

This remarkable success in hiring is the result of an intense team effort, from the work of the Personnel Committee, chaired by Professor **Ralf Spatzier**, and the staff supporting it, to our incredible faculty and graduate students, whose enthusiastic hosting conveyed the strength and spirit of our department. We are also grateful for our deans' strong support in enabling us to make competitive offers.

Although national-level changes have introduced significant budgetary uncertainty, we remain optimistic about our faculty search through Michigan's Initiative for the Foundations of Artificial Intelligence. This Math Department–led initiative, in collaboration with the Departments of Statistics, Computer Science Engineering, and Electrical and Computer Engineering, seeks to hire one mid-career professor in each of these four departments this year.

The Department also marked two bittersweet retirements last year, as Professors

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New Faculty

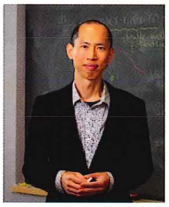
Zhiyan Ding joins the mathematics faculty as a tenure track Assistant Professor. He attended Shanghai Jiao Tong University for a B.A., and received his Ph.D. in mathematics from the University of Wisconsin-Madison in 2022. He was Morrey Visiting Assistant Professor at the University of California-Berkeley from 2022-2025.

Professor Ding studies applied and computational mathematics, with a particular interest in numerical and stochastic analysis in diverse fields such as quantum computing, machine learning, and data science. His interests extend to quantum eigenvalue estimation, signal processing, quantum and classical optimization and sampling, and mean-field analysis. He strives to attain a deep mathematical understanding of existing algorithms and works on designing new ones.

Patrick Lutz joins the mathematics faculty as a tenure track Assistant Professor. He attended the University of California-Berkeley for both his B.A. (2016) and Ph.D. (2021) degrees. Professor Lutz was a Hedrick Assistant Adjunct Professor and NSF Postdoc at UCLA from 2021-2023, and then an NSF Postdoc at UC Berkeley.

Professor Lutz studies mathematical logic,with emphasis on computability theory and descriptive set theory, and their intersection, effective descriptive set theory. He is interested in mathematical logic much more generally, especially questions which are philosophically well-motivated and contain substantial mathematical content. He received the Sacks Prize for outstanding doctoral dissertation in mathematical logic from the Association for Symbolic Logic, and was recognized with the Outstanding Graduate Student Instructor Award at Berkeley.

Naoki Masuda joins the mathematics faculty as a Professor (25%), with a joint appointment with the Department of Computational Medicine & Bioinformatics. He attended the University of Tokyo for his B.Sc., M.Sc., and Ph.D. in Engineering from the Department of Mathematical Engineering and Information Physics.



Professor Masuda was a Research Fellow, Lecturer, and Associate Professor at the University of Tokyo until 2014. He then moved to the University of Bristol, UK as Senior Lecturer and Associate Professor. Since 2019 he has been on the mathematics faculty of the State University of New York at Buffalo, and was named a Professor in 2021.

Professor Masuda's research is in applied mathematics. He studies network science: dynamical processes (e.g. contagion processes, random walks, evolutionary dynamics, early warning signals) on networks, temporal (i.e., time-varying) networks, and interdisciplinary applications. This extends to Mathematical Biology: gene networks, brain networks, collective behavior and networks of animals, evolutionary graph theory, evolutionary game theory. Professor Masuda has received significant recognition for his work, including the JSPS (Japan Society for Promotion of Science) Prize in 2020. He has been an Associate Editor of SIAM Journal on Applied Mathematics since 2024.

Lue Pan joins the mathematics faculty as an Associate Professor. He received his B.A. from Peking University, and earned his Ph.D. from Princeton University in 2018. Professor Pan was a Dickson Instructor at the University of Chicago from 2018-2021, and then returned to Princeton as a Simons Junior Faculty Fellow from 2021-2024, and Assistant Professor from 2024-2025.

Professor Pan's research is in algebraic number theory, in particular, the p-adic aspects of the Langlands program including p-adic Galois representations and p-adic automorphic forms. His current research focuses on the study of the p-adic geometry of Shimura varieties using recent developments in p-adic Hodge theory. In 2025, he was awarded a Sloan Research Fellowship.

Sam Payne joins the mathematics faculty as a Professor. After receiving his A.B. from Princeton, he came to UM and earned his Ph.D. in 2006 under the direction of William Fulton. Since 2018 Professor Payne was with the University of Texas at Austin as the Penzoil Company Regents Professor of Mathematics. His previous appointments include Yale University from 2010-2018, and Stanford University from 2006-2010.

Professor Payne's broad research interest is the algebraic geometry, topology, and combinatorial structure of algebraic varieties and their moduli spaces. His recent work involves combinatorial and motivic structures in unstable cohomology, especially for moduli of curves and abelian varieties. He has also studied toric varieties and applications of tropical and non-archimedean analytic methods in algebraic geometry.

In 2006, Professor Payne was awarded the department's Sumner Myers Prize for best thesis. He has subsequently been awarded a Clay Research Fellowship, the Max Planck-Humboldt Medal, and a Simons Fellowship, and was named Fellow of the AMS in 2023.

Ian Tobasco joins the mathematics faculty as an Associate Professor.

He received his B.S.E. in aerospace engineering with a minor in mathematics from UM in 2011, and earned a Ph.D. in mathematics from the Courant Institute of Mathematical Sciences at NYU in 2016. Professor Tobasco was a James Van Loo Postdoctoral Fellow and Assistant Professor at UM from 2016-2019. From 2019-2023 he was an Assistant Professor at the University of Illinois-Chicago, and then was an Associate Professor at Rutgers University.

Professor Tobasco's research is in applied mathematics and analysis with a focus on calculus of variations and mechanics. His current interests include understanding how thin elastic shells crumple and wrinkle when confined, as well as developing a homogenized theory of mechanical metamaterials such as origami. Professor Tobasco has also worked on problems in fluid dynamics and spin glasses. For his work on wrinkling patterns, Professor Tobasco was awarded the 2025 SIAM Activity Group on Analysis of Partial Differential Equations Best Paper Prize. He was previously recognized by the University of Illinois Chicago with a Researcher of the Year Award, and by the Courant Institute where he received the Kurt O. Friedrichs and Wilhelm T. Magnus Memorial Prizes.

Honors Program

(*continued from page 1*)

cohorts, building relationships that continue throughout their academic journeys and beyond. These cohorts move together through the honors curriculum and are active participants in departmental activities. This collaborative environment fosters long-lasting bonds and a shared commitment to exploring mathematical concepts.

For more than 60 years, some of the department's most distinguished faculty have taught in the honors courses. Professors such as Don Lewis, Al Taylor, James Wendel, Jack McLaughlin, Hugh Montgomery, and Carl Simon have all played significant roles in teaching and managing the 90s sequence. Many alumni recognize Tom Storer for his profound impact on heir lives, as both an instructor of honors courses and also as a counselor in the college's honors program. A gift fund in Tom Storer's name helps to support the math honors program. In recent years, Professors Stephen DeBacker and Sarah Koch have served as coordinators and instructors of the initial honors courses, alongside other faculty and honors committee members who continue working with honors students throughout their academic careers.

In the last academic year, two honors alumni from the class of 1968 reconnected with the department to share their memories, and even participate in the current honors courses. Their stories are on page 12. If you would like to share your own experiences and memories from your time pursuing mathematics degrees at Michigan, please send us an email at math.mich@umich.edu.

Michigan Reception at the 2026 Joint Mathematics Meetings

Tuesday, January 6, 5-7 PM — Marriott Marquis Cherry Blossom Room

RSVP to math.mich@umich.edu All are welcome! See you in D.C.!

Faculty Kudos

Charlotte Chan Receives Packard Fellowship

Assistant Professor **Charlotte Chan** was awarded a Packard Fellowship

from the David and Lucille Packard Foundation. She is one of only 20 recipients nationally to receive a 2025 fellowship. Considered one of the most prestigious honors available for young scientists, the award recognizes innovative early-career scientists and engineers, and offers them the opportunity to experiment, take risks, and explore new ideas with the resources provided. Charlotte received her Ph.D. from UM under the direction of Kartik Prasanna.

Mark Conger Receives Teaching Award

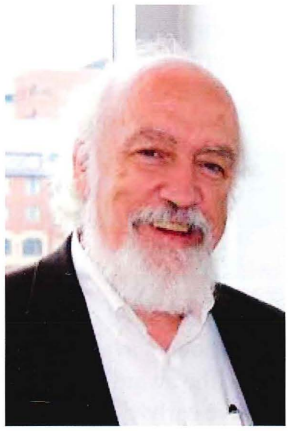
Teaching Professor and Lecturer **Mark Conger** has been awarded the

2025 Matthews Underclass Teaching Award from the College of Literature, Science and the Arts. The award recognizes an instructor who is able to inspire wonder and excitement in early undergraduate students.

In the nomination, Conger was cited for his dedicated and impressive work fostering a highly supportive, welcoming, and tight-knit community for first-year STEM students as "the founder and sole instructor for the deeply impactful Douglass Houghton Scholars Program (DHSP)." He is recognized as "a beloved figure and source of inspiration for a very large number of first- and second-year students." Former students speak of Mark as "the kindest person ever," someone who "introduced me to beautiful and amazing math problems that blew my mind."

Two Faculty Members Retire

Daniel M. Burns, Jr., Professor of Mathematics, retired from active faculty status on June 1, 2025.



After receiving a B.S. from the University of Notre Dame, Professor Burns earned his Ph.D. in Mathematics from the Massachusetts Institute of Technology in 1972. Professor Burns held faculty positions at Princeton University from 1972-1978, including a year as a member of the Institute for Advanced Study. He joined the UM Mathematics faculty in 1978 as an Associate Professor, and was named Professor in 1983. During his tenure, he held visiting appointments at several institutions in the U.S. and Europe. Professor Burns received a Sloan Fellowship in 1978 and was named a Fellow of the American Mathematical Society in 2013.

Professor Burns' research has primarily focused on complex geometry and several complex variables. He has made significant contributions in these areas, particularly in understanding the properties of complex manifolds, CR structures, Monge-Ampère equations, and complex analytic structures. Professor Burns has also studied topics such as the geometry of Kähler manifolds and differential geometry.

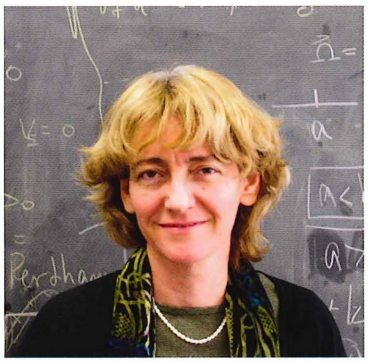
From 2005-2017, Professor Burns was co-director of the UM Bioinformatics program, and continues to work with its faculty on interdisciplinary research. Throughout his career, Professor Burns has advocated bringing science outreach to underserved populations, both locally and abroad. He has been coordinator and co-coordinator of the STEM-Africa Initiative with the UM African Studies Center, and helped organize five STEM conferences in Ann Arbor, Ghana and Cameroon. He has also been involved with organizing the Buea International Conferences on Mathematical Sciences in Cameroon.

From 2003-2007 he was the director of the Michigan Math and Science Scholars program, helping the program expand from its former math-only focus. Locally, Professor Burns worked with public schools in Detroit to offer opportunities to deserving students. He also participated in a science outreach program for local at-risk middle school students.

Professor Burns advised 17 Mathematics Ph.D. students, served on many Ph.D. dissertation committees, and mentored several young faculty and postdoctoral researchers. During his time at UM, he served on numerous committees at the departmental, college, and university level.

Smadar Karni, Professor of Mathematics, retired from active faculty status on January 1, 2025.

After receiving a B.S. in Mathematics and Physics from Hebrew University, Professor Karni earned her M.S. in Applied Mathematics from Tel Aviv University. She received a Ph.D. in Aerospace Engineering in 1990 from Cranfield Institute of Technology under the supervision of Philip Roe. Professor Karni held a postdoctoral assistant professorship at UM, and an NSF postdoctoral fellowship at NYU Courant Institute. She held positions at Temple University before returning to UM in 1997 as Associate Professor, being promoted to Professor in 2003.



Professor Karni's research is in applied mathematics and numerical analysis, specifically numerical methods for partial differential equations, computational fluid dynamics, and nonlinear hyperbolic conservation laws. The systems of equations are characterized by the propagation of waves, and are dominated by the formation of shock waves and by rich and complex nonlinear wave interactions. Her publications include significant articles on a range of topics including nonreflecting boundary conditions, nonconservative hyperbolic systems, compressible multifluids, slowly moving shocks, interface tracking, shock-interface interactions and adaptive algorithms. Application areas are wide ranging and include compressible gas dynamics, astrophysical flows, shallow water systems in environmental flows, water waves, and more recently systems of partial differential equations modeling traffic flows and their simulations.

Professor Karni advised eight graduate students, served on many Ph.D. dissertation committees in Mathematics and Engineering, plus mentored several young faculty and postdoctoral researchers. Recognized as an excellent teacher, her courses focused on applied mathematics, including numerical methods and analysis, differential equations, and scientific computing. She actively encouraged participation of women in applied mathematics, and was a four time recipient of the Crosby Research Award from the National Science Foundation for advancement of women in science and engineering. During her time at UM, she served on several committees in the department and college, and at the university level.

View from the Chair's Office

(*continued from page 1*)

Dan Burns and **Smadar Karni** taught their final classes after long, distinguished careers at Michigan. We are deeply grateful for their many years of dedication and service—they will be greatly missed. For more on their careers, please see page 4.

After eight years of dedicated service, Professor **Kristen Moore** has stepped down as Associate Chair for Education. Her role had become so large that we needed two professors to replace her! Professor **David Speyer**, as Associate Chair for Education-Logistics, oversees the scheduling of our 45,000 student credit hours worth of classes each year, while Professor **David Barrett**, as Associate Chair for Education-Personnel & Curriculum, will handle the other aspects. I'm deeply grateful to Kristen for her steady leadership during turbulent times—including the pandemic—and to both Davids for their willingness to take on these critical responsibilities!

Dick Canary has concluded his long and impactful tenure as Associate Chair for Term Faculty, and will be replaced by Professor **Thomas Lam**. This important role oversees the hiring and mentoring of our fabulous group of Postdoctoral Assistant Professors. This group of over 60 young mathematicians on three-year appointments ("postdocs") bring tremendous energy to our department through their research and teaching. For example, last year our postdocs supervised many undergraduate research projects—16 undergrads in summer REUs and 46 students in our Lab of Geometry (also known as Log(M)), which was run by postdoc **Alejandro Bravo-Doddoli** as the instructor for Math 440.

On the curricular front, Michigan Math continues to grow and evolve to meet the needs of students at every level. We opened a beautiful new study space in East Hall this January for our Inquiry Based Learning Center (IBL), now led by Professor **Stephen DeBacker.** Designed for IBL students, tutors, and instructors, the space quickly became a vibrant hub where students gather to enjoy "doing math" together. Our mascot, I.B. (Ibble) Owl, (below, art by Amanda Burcroff, 2019) is now a familiar sight on student laptops and water bottles, helping IBL students connect wherever they meet on campus.

We are also excited about a new partnership with the Ross School of Business. We have launched a custom calculus course focused on decision-making in business contexts, designed in collaboration with Ross and the University's Center for Research on Teaching and Learning. Professor **Mattias Jonsson** is serving as Course Coordinator for "Ross Calculus," with course materials developed by Lecturer **David Kausch**, GSI **Saket Shah** and our Ross colleagues. This collaboration promises to deepen Ross students' appreciation for the power of calculus in real-world business decisions as well as strengthen Math's relationship with the business school community, where mathematics is increasingly important.

Looking ahead, we're thrilled about a new course offering from Professor **Kartik Prasanna**: Math 314-The Mathematics of Blockchains and Cryptocurrencies, debuting in Winter 2026. Designed with accessibility in mind, the course requires only high school algebra and some coding experience. This timely and innovative course should spark curiosity and inspire students from across disciplines to learn more math!

All of these exciting activities are funded in part by donations from our loyal alumni and friends. Your generosity truly makes a difference: it supports students, funds groundbreaking research, enables crucial outreach, and strengthens our community.

Thanks to your enthusiasm, Michigan Math led LSA in the number of individual donors on Giving Blue Day. As a result, we earned a $5,000 bonus from the College. Your contributions directly benefit programs like Math Corps, our impactful summer camp for Ypsilanti middle- and high-schoolers led by Professors **Sarah Koch** and **Stephen DeBacker**, as well as the Douglas Houghton Scholars Program, which builds a highly impactful and supportive community of STEM undergraduates at Michigan, led by Teaching Professor **Mark Conger,** who just won a well-deserved award for this work (see p. 3). Thank you for providing the financial means for us to make a real impact in kids' lives!

This fall, we have an opportunity to honor our esteemed colleague and former Chair, Professor Emeritus **Mel Hochster**. In recognition of Mel's profound impact as a research leader, an anonymous donor is generously matching contributions 2:1 (up to 100K) to establish the Mel Hochster Research and Mentorship Award fund. This fund will help us recruit and retain top-tier research faculty by recognizing their impact and supporting their research group—including their postdocs, and graduate and undergraduate students. These kinds of funds are critical in maintaining our status as an international center for research in mathematics.

Please drop us a line and let us know how you are doing. Go Blue!

Recent Doctorate Degrees

Schinella D'Souza completed the dissertation "*Thurston Theory for a Family of Chebyshev Polynomials and Cosine Maps*" under the directon of Sarah Koch. Schinella will be a Teaching Postdoctoral Fellow at the University of Toronto.

Zenan Fu completed the dissertation "*Cluster Structures in Mixed Grassmannians*" under the directon of Sergey Fomin.

Jiajia Guo completed the dissertation "*Median Filters for Multiphase Interfacial Motions*" under the direction of Selim Esedoglu and Ashwin Shahani. Jiajia will be a Walter Noll Postdoc Research Associate at Carnegie Mellon University.

Saem Han completed the dissertation "*Forward and Inverse Numerical Methods Leveraging Gradient Flows and Optimal Transport*" under the direction of Shravan Veerapaneni and Krishna Garikipati.

Max Lahn completed the dissertation "*Reducibility and Anosov Representations*" under the directon of Dick Canary. Max will be a Postdoc at the University of Wisconsin.

Han Le completed the dissertation "*Log-Determinant of the Laguerre Beta Ensembles and Free Energy of the Bipartite Spherical Sherrington–Kirkpatrick Model*" under the direction of Jinho Baik. Han will be a Postdoctoral Scholar at the University of Waterloo.

Yiyang Liu completed the dissertation "*Electromagnetic Inverse Wave Scattering via Reduced Order Modeling*" under the directon of Liliana Borcea & David Dowling.

Daniel Maes completed the dissertation "*Understanding Coexistence Outcomes for Intransitive Competition Using Properties of Circulant Matrices*" under the direction of Victoria Booth and Annette Ostling. Daniel will be a Postdoctoral Research Associate at the University of Utah.

Andres Martinez Servellon completed the dissertation "*A Theory of Higher Order Perivations*" under the direction of Karen Smith.

Michael Mueller completed the disseration "*Reverse Hurwitz Counts of Genus 1 Curves*" under the direction of Aaron Pixton.

Scott Neville completed the dissertation "*Combinatorics of Quiver Mutations*" under the direction of Sergey Fomin. Scott has positions at the Institute for Computational and Experimental Research in Mathematics and the University of Quebec in Montreal.

Kashvi Srivastava completed the dissertation "*Analytical and Computational Approaches to Nonlinear Dynamics in Enzyme Kinetics and Sleep-Wake Regulation*" under the direction of Victoria Booth and Santiago Schnell. Kashvi will be Quantitative Research Analyst at Graham Capital Management, L.P.

Christopher Stith completed the dissertation "*Trapped Surface Formation in General Relativity and Double Null Foliations*" under the direction of Lydia Bieri.

Olivia Strahan completed the dissertation "*Combinatorial Methods in Mixed Characteristic: The Theory of t-Monomials*" under the direction of Karen Smith. Olivia will be a Postdoctoral Fellow at the University of New Mexico.

Guanhua Sun completed the dissertation "*Reconstruction, Simulation, and Analysis of Large-Scale Neuronal Connectivity of the Mouse Brain*" under the direction of Daniel Forger and Brendon Watson.

Derrick Sund completed the dissertation "*Modeling of Cell Cycle Distortion and p16ink4a Significance in Human Papillomavirus-Infected Cells and Novel Use of Partial Differential Equations in Epidemiology Modeling*" under the direction of Marissa Eisenberg & Trachette Jackson.

Tejaswi Tripathi completed the dissertation "*Exponential Last Passage Percolation in the Upper Large Deviation Regime and Multi-Point Distributions for other LPP Models*" under the direction of Jinho Baik. Tejaswi will be a Visiting Assistant Professor at the University of Kansas.

Katja Vassilev completed the dissertation "*One-dimensional Wave Kinetic Theory*" under the direction of Zaher Hani. Katja will be an L.E. Dickson Instructor at the University of Chicago.

Sridhar Venkatesh completed the disseration "*Hodge Theoretic Singularities and Hodge Theoretic Aspects of Toric Varieties*" under the direction of Mircea Mustaţă. Sridhar will be an Assistant Adjunct Professor at UCLA.

Shirlyn Wang completed the dissertation "*A Multi-Model, Data-Driven Approach to Studying Tumor-Immune Dynamics and Immunotherapy Efficacy*" under the directon of Marissa Eisenberg & Trachette Jackson. Shirlyn will be a Research Scientist with Upstart.

Boyang Wu completed the disseration "*Rigorous Derivation of the Wave Kinetic Equation for β-FPUT System*" under the direction of Zaher Hani. Boyang will work in quantitative analyitics at Barclays.

Teresa Yu completed the dissertation "*Equivariant Modules Over Polynomial Rings in Infinitely Many Variables*" under the diretion of Andrew Snowden. Teresa will be a Postdoc at Max Planck Institute for Mathematics in the Sciences.

Qiusheng Zhao completed the dissertation "*Double Ramification Cycle and Admissible Cover Cycles*" under the directon of Aaron Pixton.

2025 Graduate Fellowships & Awards

Allen L. Shields Fellowship
Shabarish Chenakkod
Choco Li

G. Cleaves Byers Award
Ekaterina Shchetka

Luther Claborn Fellowship
Benjamin Baily

Arthur H. Copeland Memorial Fellowship
Ethan Huffman

Wirt and Mary Cornwell Prize
Christopher Stith
Katja Vassilev

Cameron & John Courtney Scholarship
Madelyn Cruz
Riku Kurama

Elizabeth Caroline Crosby Research Award
Joanne Dong

E.S. & A.C. Everett Memorial Fund
Chinmaya Kausik

A. V. Flint Memorial Scholarship
Kausik Das

Donald J. Lewis Fellowship
Kaya Lakein

Alice Webber Glover Scholarship
Simran Khunger

Juha Heinonen Memorial Fellowship
Ying Wang

Daniel J. Hathaway Graduate Student Fellowship
Alexander Bauman

Marjorie Lee Browne Scholars
Ian Augsburger
Ammar Eltigani
Nick Freeman
Barry Henaku
Renato Pinto Reveggino
Nicholas Simafranca
Bridgett Slone

Edwin Wilkinson Miller Award
Calvin Yost-Wolff

Christopher P. Moeller Scholarship
Kaito Iwasaki

Mathematics Department Scholarship
Ram Ekstrom

National Science Foundation Fellows
Alexander Bauman
Anthony Chen
Kausik Das
Barry Henaku
Simran Khunger
Kaya Lakein
Henry Talbott
Calvin Yost-Wolf

Peter Smereka Thesis Award
April Nellis

Prasad Family Fellowship
Paul Mammen
Sridhar Venkatesh

President's Challenge
Huston Wilhite

Proquest Distinguished Dissertation Award
Alex Kapiamba

Rackham Margaret Ayers Host Award
Caitlin Waddle

Rackham One-Term Fellows
Schinella D'Souza
Kyusuk Kim
Kexin Li
Urshita Pal
Boyang Wu

Rackham Outstanding GSI Award
Ekaterina Shchetka

Rackham Predoctoral Fellowship
Anthony Chen
Hyunsuk Kim
Urshita Pal

Rackham Science Award
Samuel Boardman
Dylan Cordaro
Cyril Cordor
Ram Ekstrom
Nick Freeman
Oscar Gonzalez
Jordan Grant
Neil MacLachlan
Daniel Maes
Renato Pinto Reveggino
Shivani Prabala
Gahl Shemy
Nicholas Simafranca
Bridgett Slone
Mia Smith
Christopher Stith
Derrick Sund
Caitlin Waddle

Gabrielle & Sophie Rainich Fellowship
Sadie Lipman

Joel Smoller Graduate Fellowship
Jasper Liang

Usha Sharma Bhalla Fund
Joe Huang

Sumner B. Myers Memorial Prize
Suchitra Pande

Department of Mathematics Outstanding Teaching Award
Han Le

The Karen Rhea Excellence in Teaching Award
Tejaswi Tripathi

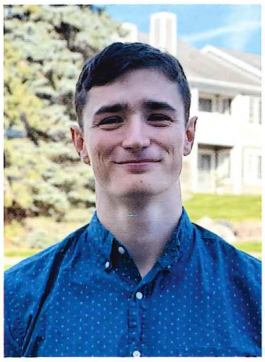
The Pat Shure Excellence in Teaching Award
Caitlin Waddle

The Mort Brown Excellence in Teaching Award
Havi Ellers

Graduate Students Receive Simons Fellowships

Graduate students **Benjamin Baily** and **Sadie Lipman** are among the first cohort of mathematics students to receive a Simons Dissertation Fellowship. The Simons Dissertation Fellowship provides research support to outstanding graduate students in mathematics in the final years of their Ph.D. The grant coincides with the fourth and fifth years of the fellow's Ph.D. program. This highly competitive fellowship is awarded to only 40 Ph.D. students nationally.

Ben is a fourth year graduate student, studying commutative algebra and algebraic geometry in positive characteristic, under the direction of Karen Smith. He



received his B.A. in mathematics from Williams College. Growing up in Montclair, NJ, Ben enjoyed and excelled at math. He was encouraged to pursue math by a professor at Williams. He chose Michigan due to the active research group in commutative algebra, an area he feels has a good balance of different modes of research (such as working with intuition/heuristics, parsing abstract theory, elementary/first-principles approaches, concrete calculations, etc.). Ben enjoys the collaborative environment of the department, and besides his own teaching and research, he has been able to work with all levels of students and faculty on various research programs. He is also active on the UM club wrestling team.

Sadie is also in her fourth year, and studies representation theory under the direction of Charlotte Chan. She received her B.S. in mathematics from University of California,

Santa Barbara. Sadie chose UM to participate in a larger mathematics environment. She has found everyone here to be extremely friendly, and current and former grad students spoke highly of the department. Combining several areas of mathematics, Sadie is studying questions in representation theory motivated by number theory, using tools from algebraic geometry. She recently helped organize the graduate student summer mini-courses and is currently on the executive board for Michigan's Association for Women in Mathematics chapter. She has taught in the intro math program most semesters, and is currently the student co-coordinator for Math 115. Sadie's hobbies include knitting, print-making, and making earrings.

2025 Graduating Senior Profile Saja Gherri

Saja Gherri graduated in May 2025 with a double major in mathematics and interdisciplinary astronomy. Saja was one of the student speakers at the math graduation ceremony this year, and she received a Mathematical Citizenship Award. She is currently pursuing a doctorate in mathematics at the University of Texas at Austin.

Originally from Connecticut, Saja was initially drawn to astronomy but added a math major to strengthen her abilities

in the sciences. As she continued to study math, she discovered that concepts that repeatedly appeared across the natural sciences were abstractly and concisely represented in mathematics. Saja appreciates the patience and creativity that was required to develop and understand mathematics. She grew to enjoy problems that "have inspirations from or applications to astronomy or physics," she says. "It helps that the math department here has a very contagious passion that made my courses very enjoyable."

Saja participated in several research experiences throughout her time at UM that helped her develop academic independence, and also determine her topics of interest. "Participating in these collaborations as an undergrad is a particularly interesting experience because you learn how capable you are of adapting and immersing yourself in a new problem that goes beyond your regular coursework," she says. In addition to participating in math research, Saja was a mathematics course instructor, for which she was recognized with the Sidney Fine Teaching Award from the LSA Honors Program.

In 2023, Saja was an instructor in the Math Corps at U(M) summer camp when she encountered a student on her team that did not seem interested in the camp or learning math. Over the course of the program, Saja's team worked with her to develop friendships, as well as to help with math skills. The student made great progress by the end of the program, and even started to read books on the sciences. Saja has returned to Math Corps for the past two summers, and had the opportunity to work with the same student and see even greater growth.

- Adapted from an article by Katie Vloet

2025 Undergraduate Awards

UM Undergraduate Mathematics Competition
Tuong Le - First Place
Alex Xu - Second Place
Marcus Gozon - Third Place

85th Annual Putnam Mathematics Competition
Tuong Le
Bohang Yu
Deron Lessure

Evelyn O. Bychinsky Award
Gavin Bell
Zachary Duah
Vincent Ferrara
Christine Gao
Sophia Guo
Jeffrey Huang
Grant Koh
Albert Li
Adam Nichamoff
Michael Williams
Tony Zhang

Marc Altschull Actuarial Award
Anika Palkhiwala

Marylin and Stewart Gloyer Award
Constance Parker
Rohit Tattitali

Leon P. Zukowski Prize for Math Lab Mentoring
Breanna Rawlins

Mathematics Alumni/Alumnae Scholarship
Devayani Pradhan
Ilir Ziba

Jack McLaughlin Award in Algebra
Ethan Harr

Wilfred Kaplan Award in Applied Mathematics
Shuge Ouyang

William LeVeque Award in Number Theory
Bohang Yu

Frank Raymond Award in Geometry and Topology
Chunye Yang

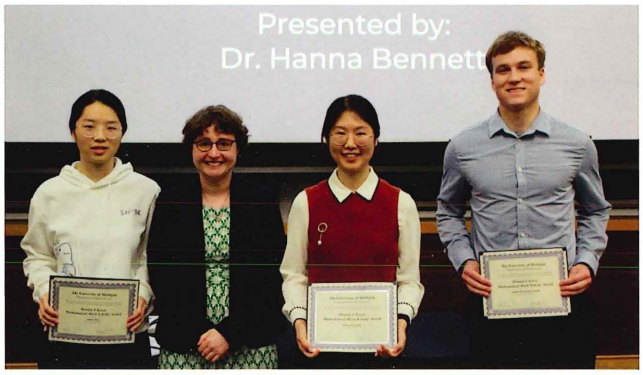
George Piranian Excellence in Mathematical Writing Award
Tuong Le

Irving Wolfson Award
Sajni Patel

Lois Zook Levy Award for K-12 Teaching
Gwynn Bell

Sumner B. Myers Award in Analysis
Yuyang Wang

CIGNA Award
Sawyer Gustafson
Hunter Stanek
Gabe Weber



Top: Donald J. Lewis Award recipients (l-r) Zhixuan Wu, presenter Hanna Bennett, Xiaoran Chen, Tapio Heinonen Smith. Right: Alumni Scholarship Award recipients (l-r) Ilir Ziba, presenter Karen Smith, Devayani Pradhan.

Margaret S. Huntington Prize in Actuarial Research
Zabelle Bobelian
Elliott Chai
Yotam Chopra
Anjali Hareesh
Benjamin Heemer
Mason Holst
Maansi Kandula
Ashni Kansara
Jonathan Manela
Nicole Membrere
Owen Persinger-Lampela
Alexander Sweeney
Angelina Yang

Natarajan Family Award for Actuarial Science
Justin Berghorstz

Otto C. Richter Memorial Prize
Muhamad Idlan Bin Rusmin

Thomas S. Solomon Actuarial Award
Katherine Bednarz

Outstanding Achievement in Mathematics
Jun Chen
Daniel Cross
Minki Lee
Junjie Lu
Maxwell Natonson
Yiwei Wang
Yi Wang
Tian Xia
Alex Xu
Angelina Zhang
Hankai Zhang

Donald J. Lewis Mathematical Merit Scholar Award
Xiaoran Chen
Tapio Heinonen Smith
Otto Janke
Nathan Varner
Zhixuan Wu

Mathematical Citizenship Award
Daniel Cross
Saja Gherri
Maxwell Natonson
Julia Rehring

Outstanding Graduating Seniors
Marcus Gozon
Jiachen Kang
Tuong Le
Yuchong Zhang

Wirt and Mary Cornwell Prize in Mathematics
Timothy Cheek

2025 Undergraduate Scholarships

Allotta Family Scholarship
James Landers

Richard and Dorothy Carter Scholarship
Henry Kostbade
Joshua Lassaline
Yanlin Lu
Joshua Lynch
Angie Nguyen

Alan Kaylor Cline Scholarship
Jayda Kirkwood

Arthur H. Copeland Scholarship
Bohang Yu
Tony Zhang

L.C. Cortright Memorial Scholarship
Abigail Davidson
David Mokaya
Mya Orner
Owen Persinger-Lampela
Ashley Pittel
Pable Razny
Yiwen Rong
Sharon Santosh

Cameron & John Courtney Scholarship
Lauren Staruch

Frank H. and Agnes A. Davis Scholarship
Zabelle Bobelian
Valerie Caldwell
Andrew Castelucci
Ella Cruz
Alexandria Davis
Jadon DeLand
Alex Drossman
Benjamin Filias
William Furge
Nikki Gerodemos
Rishabh Gowda
Charley Guzman-Gomez
Jordan Hoffner
Mason Holst
Ellie Johnson
Ashni Kansara
Jaiden Kosanovich
Bryce Poss
Gus Vitale

Carl Hahn Fischer Scholarship
Ahmad Haiqal Bin Ahmad Razif
Elle Chen
AnnDee Geddes
Reagan Gothard
Chu Ming Hsiao
Rachel Leonard
Vasudha Marur
Anthony Nichols

Alice Webber Glover Scholarship
Alyssa Falco
Mitchell Fuchs
Nikhil Kori
Tina Masterson
Ava May
Nicole Membrere
Sajni Patel

James W. Glover Scholarship
Carey Wang

Marilyn & Stewart Gloyer Scholarship
Samhita Kashyap

David G. Hartman Actuarial Scholarship
Trent Cappaert
Alyssa Falco
Mitchell Fuchs

Miner S. Keeler Scholarship
Beinuo Guo
Yuchen Huang
Otto Janke
Zirui Liu
Devayani Pradhan
Shaotian Sun
Yuyang Wang
Martha Rose Wolf
Chunve Yang
Tianyong Yao
Yutong Zhou

Victoria Lee Scholarship
Peter Ahlin

Mathematics Scholarship Fund
Steven Zanetti

Virginia McCulloh Scholarship
Karl Li

Carroll V. Newsom Scholarship
Ramon Diego
Zachary Duah

Bychinsky Award recipients (l-r) Gavin Bell, Chistine Gao, Sophia Guo, presenter Stephen DeBacker, Grant Koh, Adam Nichamoff, Michael Williams, Tony Zhang.

Louis Hess
Matthew Jordan
Aleksey Lopez
Carlos Rosales
Francisco Vigil

Cornelia Norton Scholarship
Madelyne Cabasaan
Ashton Howard

Steph H. Oppenheim Scholarship
Alexis Elam

Willilam F. Poorman Scholarship
Oscar De Castro
Jonathan Holland
Nazme Hanif Norman Ezane
Janae Shao
Nicholas Sheppard
Naomi Sowa
Alexander Sweeny
Aaron Walenciak
Jiayi Wei
Max Wiley
Losian Yaldo
Angelina Yang
Mingyan Zhang

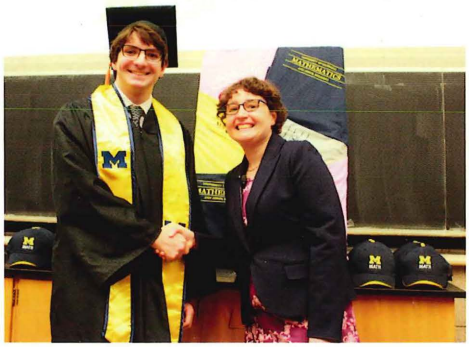
Prasad Family Fund
Sophia Han
Evelyn Lee
Frank Li

Maxwell & Marjorie Reade Scholarship
Rohan McInneshin
Marissa Johnson

Tom Storer Honors Scholarship
Ilir Ziba

Graduation 2025

In May, the department celebrated as students received their undergraduate, masters, or PhD degrees. Ceremonies recognized students individually, and a group celebration was held in the the Mathematics atrium. Congratulations to all graduates! Keep in touch and let us know how you are doing: math.mich@umich.edu.



Alumni Memories - 1960s Math Honors Program

Below we highlight the recollections of two 1968 Mathematics alums who were part of the honors program. Chair Karen Smith had the opportunity to chat with Bob Brammer (B.S. Honors Math 1968), who was in Ann Arbor for his granddaughter's graduation from the School of Kinesiology. A summary of the conversation is included below. Peter Gray (B.S. Math 1968, M.A. Math 1973) was a participant in the 2024-2025 academic year Honors Math courses with Sarah Koch. He shares his experiences from the 1960s and today. Share your own stories with math.mich@umich.edu.

Bob Brammer

Bob attended Grosse Pointe High School and, as a result of his high score on the Michigan Mathematics Prize Competition, was awarded a four year tuition scholarship to UM. On November 22, 1963, his father arranged a meeting for Bob, then a high school senior, with the chair of the Physics department, Professor Dennison. A staff member interrupted their meeting with the news that President Kennedy had been shot. They proceeded to the Michigan Union, where a chalkboard with information about the shooting was being updated as it came in over the phone.

Bob Brammer

Bob very much enjoyed the honors program at Michigan Math. He took Math 195 (now Math 295) with Professor Wendel as a freshman, where he scored 27% on the first exam, which to his surprise was above average. Wendel allowed the students to take the exam home for the weekend because the scores were low; Bob chuckled that he got his score up to 43% over the weekend.

Sophomore year, Bob took Math 295-296 (multivariable calculus) with Jack MacLaughlin, whom he admired very much. In the 1960s, Math 195 was single variable calculus, Math 196 was linear algebra, using Halmos's book on the subject, and Math 295-296 was similar to the current Math 395-396.

By senior year, Bob had finished the undergraduate curriculum and took Math 601/602/603 which were analysis courses. He especially enjoyed Math 602, which was functional analysis with Paul Halmos, taught "Texas style," a precursor of the current IBL program. Inspired by R.L. Moore's famous style at Texas, students developed all the material themselves by solving problems curated by Halmos throughout the semester. He was the only undergraduate among the 5 or 6 students in Math 602.

Paul Halmos

As a freshman, Bob was invited to practice sessions for the Putnam exam. At first he felt completely lost, but later as a sophomore, he did well on the Putnam. As a senior, he was on Michigan's Putnam team, which ranked fifth in the country in 1967; Bob placed in the top 50 scorers nationwide that year.

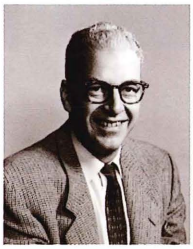
Bob was also encouraged to apply for, and was subsequently awarded, NSF funding for summer projects after both freshman and sophomore years. He worked on measure theory with Maxwell Reade after freshman year. In his sophomore summer NSF project with Jack MacLaughlin, he computed the volume of the orthogonal group.

As a senior, a NASA recruiter showed up at Michigan, and Bob eagerly accepted a position at NASA to work on the Apollo program when he graduated in April 1968. A year later, he was thrilled to have been the one who wrote the computer program that pointed the antennas in the NASA Apollo Network to get the signals from Neil Armstrong's first steps on the moon as it beamed into American living rooms.

While working at NASA, Bob received funding to earn his Ph.D. at University of Maryland in 1972, where he worked with Jim Yorke on dynamical systems. He is now President and CEO at Brammer Technology in Woburn Massachusetts, a consultancy focusing on advanced information technology, environment and climate, and cyber security. He also serves on the Board of Visitors for Maryland's College of Computer, Mathematical, and Natural Sciences.

Peter Gray

In August 2024, I realized that 60 years ago I took Math 195 and 196 as a freshman from Professor James Wendel. My high school's math stopped at Algebra II. I was not prepared for the abstract, proof-based nature of the classes. I managed good grades through tenacity and learning how to use the Math Library to find explanations for the intuition behind a topic. (The Math Library on the 3rd floor of Angell was beautiful.)



James Wendel

Over the next 3 years, I took several honors-level classes: 451-Piranian/Kessler, 525-Duren, 555-Taylor, 412-Kister, 586-Shapiro, 513-Winter. I would characterize the style of instruction with this excerpt from the Advanced Calculus 451 textbook, "Methods of Real Analysis" by Richard Goldberg of NWU: "The reader will soon discover that there are no pictures in this book. This is because we believe that the reader should learn to draw his own pictures as early as possible." Let me summarize Honors Math in those years: it was aimed at the gifted of the gifted.

At the start of sophomore year, it was my good fortune to meet Harriet Pollatsek, then a Ph.D. student. She supplied the intuition for Multivariable Calculus, drew lots of pictures, and taught me how to do proofs. (Throughout her distinguished career at Mt. Holyoke, Harriet was instrumental in reforming the college math curriculum.)

I graduated in 1968 and went to work for the next four years (newly married, wife in graduate school). I returned to grad school in 1972 and received Math M.A. in 1973. Some of the classes were 590-Rosen, 514-Winter, 601 and 603-Alexander, and 591-Kister.

For the next 40 years, I was a computer programmer at GM, VP of Product Development at Comshare, Partner at the venture capital firm Arbor Partners, and CEO of the chemical company Nanocerox (a startup from UM).

Honors math taught me how to do proofs, a skill which I applied to my three careers. As a programmer, I had to demonstrate to quality assurance that my programs operated per the requirements. As a manager, I had to persuade colleagues, customers, and industry influencers. As an investor, I had to convince my partners to make or withhold an investment. All of these required clear statements of the claim, explicit assumptions, agreed upon facts, and the application of logic.

Returning to August 2024, Professor Sarah Koch allowed me to visit her class. Oh my goodness, what a difference 60 years make. Her classes are exciting. She tells you the destination for each session. To prove a theorem, she says to the class, "how should we start?" or "what's next?" She uses pictures and diagrams to motivate and provide intuition for abstract concepts. The atmosphere in the class is sunny. The students never skip class. Student collaboration is encouraged. Students tell me that office hours are well attended and often go on for several hours.

Speaking of the students, they have been terrific. They included me in their chat group for 295, 296 and 395. They post the homework online for me. It usually takes me about 30 hours per week. I marvel at the students who in addition to math, have other classes. I have no direct evidence but I surmise that most students do very well in Sarah's classes. Even though the degree of difficulty is high, Sarah's teaching brings out the best in everyone. It has been a pleasure to participate in her classes.

Alumni Kudos

Andrew Barto (B.S. 1970, Ph.D. Computer Science 1975) was awarded the 2025 Turing Award, jointly with his Ph.D. student Richard Sutton. They were recognized for their work on reinforcement learning, a key idea underlying chatbots like Chat GPT. The Turing Award is arguably the most prestigious award in computer science.

Christopher Swanson (M.S. 1996, Ph.D. 1999) was promoted to Assistant Dean of the College of Arts and Sciences at Ashland University, after serving as a professor of mathematics at Ashland University for the last 25 years.

Department Fun

Each December at the end of the fall semester, the math department holds an annual WOLOG party. Faculty, graduate students, staff, and department friends gather to celebrate the end of the semester and the pending break. Coordinated by the SPEC (SPecial Events Committee), the event features entertainment, a puzzle (new each year), games, and plenty of food. The annual baking contest brings homemade treats from many participants. Graduate students create gingerbread structures to be judged by attendees (see below). Music is also an integral part of this gathering, with the ensemble The Möbius Band (largely made up of current and former department members) performing throughout the party. Last year, current sophomore math student Devayani Pradhan adapted the lyrics of Jingle Bells for one of the sing-a-longs during the WOLOG Party.

Dashing through East Hall
While we try to induct
Lemmas we recall
A proof we will construct.
Logic lets us pave
A path with certainty
Then a quick handwave
And end with QED!

Oh! Jingle bells, jingle bells
Jingle all the way.
Oh what fun it is to learn
New math every day, hey!
Jingle bells, jingle bells
Jingle all the way.
Oh what fun it is to prove
Theorems all the way!

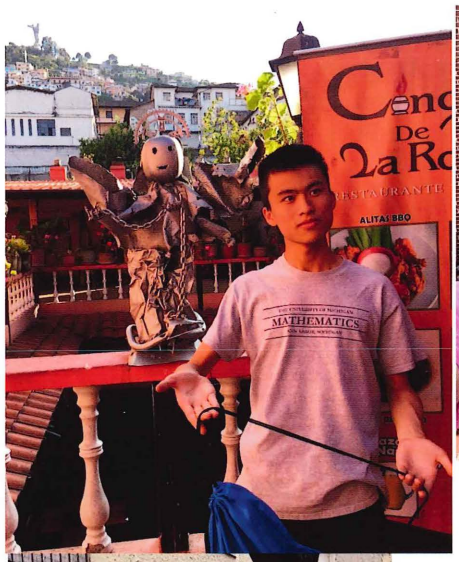
Gingerbread creations by graduate students include a quaint cottage with gummy bears enjoying a camp fire (above), and a representation of a frat house party, complete with beer pong table (below).

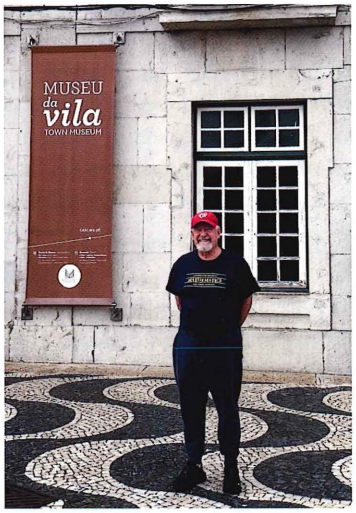
Where's Your Math T-Shirt Been?

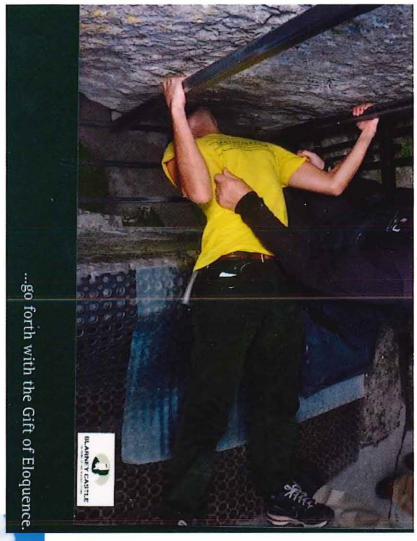
The Math T-shirt is celebrating it's 21st birthday! You can order a special edition shirt created for the occassion by following the link on the order form on the next page. These blue shirts are $20 each, while supplies last. Standard Math T-shirts can be purchased using the order form and/or link.

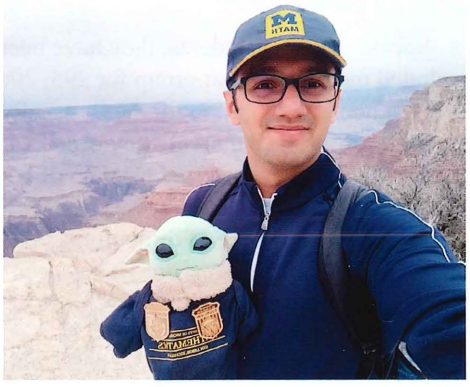
Math hoodies are also available to order by scanning the code to the right. Proceeds from the hoodies support Math Corps at U(M), the summer math enrichment program for middle school students and their high school student mentors. Please continue to document where in the world the Michigan Math T-shirt has traveled by sending your photos to um.math.tshirts@gmail.com!

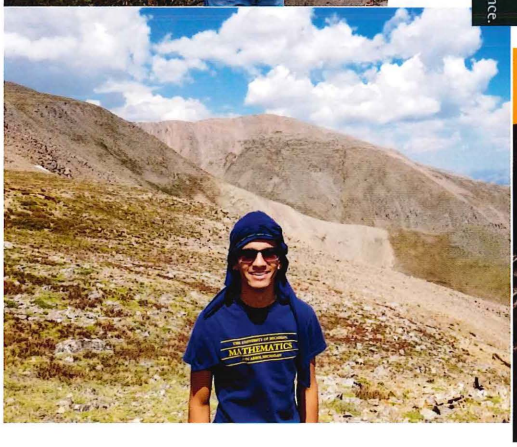
Hoodies:





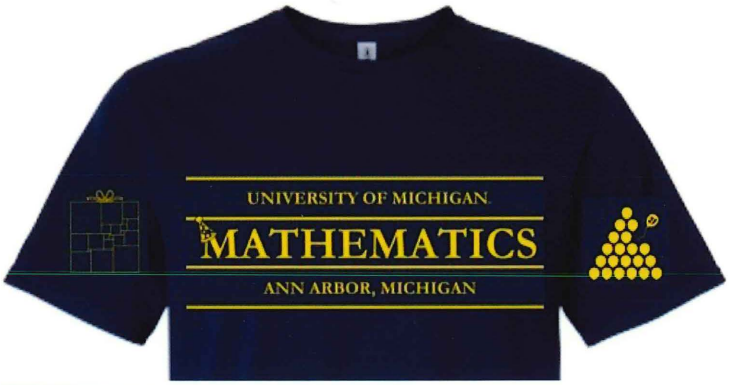






Top row, l-r: Sam Tenka (2018) in El Panecillo, Ecuador; Derek & Abby DeVaughn (2024) from a Louisiana swamp; Dan Katz (1966) in Cascais, Portrugal. Middle row, l-r: Evan Einbund (2026) in Budapest outside of Paul Erdős' house; Nicholas Triantafillou (2013) Kissing the Blarney Stone; Dhruv Kushreshtha (2024 & 2025) at the Grand Canyon with Baby Yoda, who has now been promoted to Junior Ranger for visiting two national parks. Botton row, l-r: Nikhil Shankar (2021) at S. Elbert Peak in Rocky Mountain National Park; Adjunct faculty and former postdoc Kai Rajala in Burns Park with companion Vincent Van Meow.

Top row, l-r: Zhan Jiang (2021) and Wendy Wang (2021) on the floor of the Kilauea Iki crater in Hawaii's Volcanoes National Park; A wall on the second floor of East Hall covered in t-shirt photos to celebrate the 21st birthday; Stuart Zussman (1988) in Paris, France. Left: The Mathematics Kickball Team! Below, l-r: Math department representing at the LSA Major/Minor Expo; The 21st Birthday Math Shirt!



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Medium					
Large					
X-Large					
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Watch for our email on March 18, 2026!

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